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Claims

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1. Hydroxyethyl starch for use as plasma expander obtainable by hydrolytic pre-degradation of a starch rich in amylopectin, partial hydroxyethylation up to a certain substitution degree in the presence of alkali and subsequent hydrolytic degradation to a certain molecular weight, characterized in that

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it has a mean molecular weight of 60,000-600,000 and a substitution degree MS of 0.15 to 0.5,

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the ratio of the substitution of C2 to the substitution of C6 of the anhydroglucose units is 8 - 20 and

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the substitution degree DS lies in the range from 0.15 to 0.5.

2. Hydroxyethyl starch according to claim 1, characterized in that it has a mean molecular weight of 80,000 to 400,000 and a substitution degree MS of 0.2 - 0.4, the ratio of the substitution of C2 to the substitution of C6 of the anhydroglucose units is 8 - 20 and the substitution degree DS lies in the range from 0.15 to 0.40.

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3. Hydroxyethyl starch according to claim 1, characterized in that it has a mean molecular weight of 100,000 to 300,000 and a substitution degree MS of 0.25 - 0.35, the ratio of the substitution of C2 to the substitution of C6 of the anhydroglucose units is 8 - 20 and the substitution degree DS lies in the range from 0.2 to 0.35.

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4. Process for the preparation of hydroxyethyl starch according to claim 1 wherein

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- a) starch having a content of amylopectin of $> 95\%$ is preextracted with methanol,
- b) the starch is brought by acid hydrolysis to a suitable mean molecular weight,
- c) the starch is subjected to an alkali wash,
- d) the starch is hydroxyethylated by means of a hydroxyethylation agent under alkaline conditions,
- e) the molecular weight is exactly set by acid hydrolysis,
- f) the hydroxyethyl starch thus obtained is purified and
- g) spray dried,

characterized in that as hydroxyethylation agent 2-chloroethanol is used and the hydroxyethylation is carried out under alkaline conditions at room temperature.

- 5. Process according to claim 4, characterized in that the pH value is kept at a value of about 12 during the hydroxyethylation.
- 6. Process according to claim 4 or 5, characterized in that the temperature is kept at a value of about 20 to 25°C.
- 7. Process according to any one of claims 4 to 6, characterized in that the hydroxyethyl starch is purified by filtration and ultrafiltration.

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